

Draft Federal Response to Oregon questions to CEQ  
EPA Region 10 Concerns

First Answer to Question 4: Proof is in the eyes of the beholder. There is abundant evidence that the temperature regime of the Columbia and Snake rivers has been significantly altered since construction of the dams on the rivers. Further, there are strong lines of evidence linking the dams to the altered temperature regime. Both actual temperature data and model simulations indicate that the impounded river exceeds water quality criteria four times as frequently at the Bonneville Dam site in the impounded river as in the free flowing river. Further, data shows that the dams cause temperature gradients in the reservoirs that result in particularly warm water in the shallow areas along shore. Also data shows that fish ladders and fish collection facilities at the dams can become particularly warm. Computer modeling and air temperature data show that water temperature in the impounded river does not fluctuate diurnally or in response to weather nearly as much as the free flowing river, which would cool off at night and in response to weather fronts. Also, the free flowing river had many cool places or cold water refugia along its length that are missing from the impounded river. These refugia resulted from hyporheic flow from the alluvial flood plain along the length of the river. Since the flood plains are now flooded there is no hyporheic flow. Finally, the impounded river slows the water and hence migrating juvenile salmon so that fish exposed to adverse temperatures as they migrate downstream are exposed for much longer time periods in the impounded river.

Second Answer to question 4: The question asked if the maximum feasible amount of water from the upper basin is being used to enhance and cool river flows for salmon. The answer given is that it is doubtful that additional measures are available to bring Columbia River flows into compliance with either gas or temperature under all conditions. The answer to the question is beyond EPA's purview and expertise but, certainly there are measures that could be taken to enhance and cool river flows for salmon. We have been unable to engage the Corps in discussions about feasible actions but possible actions include:

- enhance flows with water from the upper basin;
- cool water releases from the larger reservoirs (Dworshack Dam, Grand Coulee Dam and possibly Hungry Horse, Libby and Canadian Dams);
- redirect power generation to Grand Coulee to use all of its capacity, thereby drawing as much deep water as possible through its turbines;
- lowering some reservoirs to minimum pool or some other level during part of the year;
- cooling the fish ladders and fish collection facilities;
- and providing cool water refugia..

Answer to Question 7: In the list of actions that could enhance the survival of fish downstream of McNary there is no mention of water quality. One of the reasons that the fish have to be barged is because inadequate survival in the river water. The water temperature is too warm for the juvenile salmon but optimal for piscine predators and diseases. Any actions taken to restore a pre-impoundment like temperature regime and pre-impoundment flow rates would be a benefit to the fish stocks downstream of McNary. Further, actions taken to uncover the alluvial flood plains downstream of McNary would restore cool water refugia and in-river spawning habitat.

Question 1: Little is being done to ensure that federal dams are brought into compliance with the temperature standards of the CWA. The TMDL only identifies the level of improvement needed. It doesn't improve temperature. We have been unable to engage the Corps in discussions on what can be done to improve temperature. The study scope for the Water Quality Plan did not include a discussion of measures for improving temperature, did not include attainment of water quality standards as its goal and did not mention the need for capital or operational investments to improve temperature.